

## REMARKS

This is intended as a full and complete response to the Final Office Action dated May 5, 2006, having a shortened statutory period for response set to expire on August 5, 2006. Please reconsider the claims pending in the application for reasons discussed below.

Claims 1 and 3-32 remain pending in the application and are shown above. Claim 2 has been canceled by Applicant. Claims 1, 5-7, 9-11, 20, 22-23 and 27-29 are rejected and claims 15-19 are indicated to be allowed by the Examiner. Reconsideration of the rejected claims is requested for reasons presented below.

Claims 1, 10, 20, and 27 are amended to clarify the invention. These amendments are not presented to distinguish a reference, thus, the claims as amended are entitled to a full range of equivalents if not previously amended to distinguish a reference.

### ***Claim Rejections Under 35 U.S.C. § 102***

Claims 1, 5-7, 20, 22, and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by *Davis et al.* (US 6,403,949). Applicant respectfully traverses the rejection.

Claims 1 and 20 have been amended to further clarify that the reference device is located in close proximity with the optical sensor such that they are exposed to substantially equal environmental conditions. Support for the amendments to claims 1 and 20 can be found in paragraph [0022] (lines 5-8) and paragraph [0025] (lines 12-17) of the published application. *Davis* does not teach, show, or suggest that the reference device is located in close proximity with the optical sensor such that they are exposed to substantially equal environmental conditions. Rather, *Davis* discloses a sensor system having pressure and temperature sensors (reference numbers 108, 110, and 112 in Figures 5 and 6) that are remotely deployed away from a reference fiber Bragg grating (206b), which is disposed at the surface and not in the well bore with the sensors. Only the reference fiber Bragg grating is part of an optical subsystem reference module (206)

within an instrument box (101) shown in Figure 5 at the surface. The dashed line surrounding the pressure and temperature sensors in Figure 6 illustratively indicates that these sensors are not located within the instrumentation box but rather in the well bore as shown in Figure 5.

Accordingly, Applicant submits that independent claims 1 and 20, as well as those claims that depend therefrom, are allowable and respectfully requests withdrawal of this rejection.

Claims 10, 11, 27 and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by *Kersey* (US 5,227,837). Applicant respectfully traverses the rejection.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Further, the elements must be arranged as required by the claim. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

*Kersey* does not disclose "each and every element as set forth in the claim." Amended claim 10 recites the limitation of "interrogating a reference interferometer located in close proximity with the sensor interferometer, such that the reference interferometer and the sensor interferometer are exposed to substantially equal environmental conditions, to generate a reference signal insensitive to the parameter." Likewise, amended claim 27 includes "at least one reference interferometer located in close proximity with the sensor interferometer such that the sensor interferometer and the reference interferometer are exposed to substantially equal environmental conditions and configured to be insensitive to the downhole parameter."

Systems disclosed in *Kersey*, however, lack this close proximity and insensitivity as claimed. In a first system (Figure 1) taught in *Kersey*, there is "a remotely-positioned, unbalanced, fiber optic sensor interferometer" and "a locally-positioned,

shielded, unbalanced, fiber optic reference interferometer.” The reference interferometer is locally positioned in close proximity to a detector away from the remotely located sensor interferometer. A second system (Figure 5) disclosed in *Kersey* utilizes first and second sensor interferometers that both sense a change in a measurand field. Therefore, *Kersey* fails to teach, show, or suggest each and every limitation of claim 10 or 27.

Accordingly, Applicant submits that independent claims 10 and 27, as well as those claims that depend therefrom, are allowable and respectfully requests withdrawal of this rejection.

### ***Claim Rejections - 35 U.S.C. § 103***

The Examiner states with regards to claims 9, 27 and 28 that it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed. Applicant submits that these claims are patentable based at least on the traversal presented above regarding the § 102 rejections. Accordingly, Applicant requests withdrawal of the rejection and allowance of the claims.

### ***Allowable Subject Matter***

Claims 3, 4, 8, 12-14, 21, 24-26, and 30-32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form. Applicant submits that these claims are allowable based at least on the traversal presented herein regarding the independent claims from which these claims depend. Accordingly, Applicant respectfully requests withdrawal of the objection and allowance of the claims.

### **Conclusion**

In conclusion, the references cited by the Examiner, alone or in combination, do not teach, show or suggest the invention as claimed.

Having addressed all issues set out in the office action, Applicant respectfully submits that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted,



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